

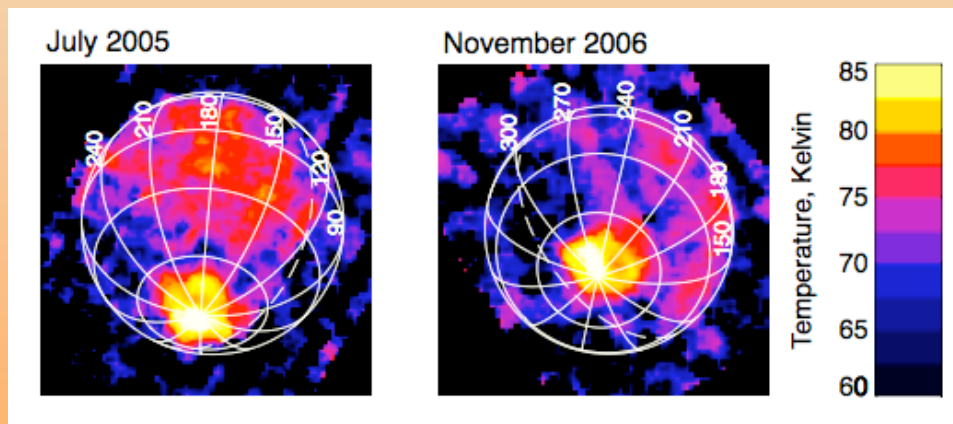
Rev. 61 Enceladus: CIRS Preview

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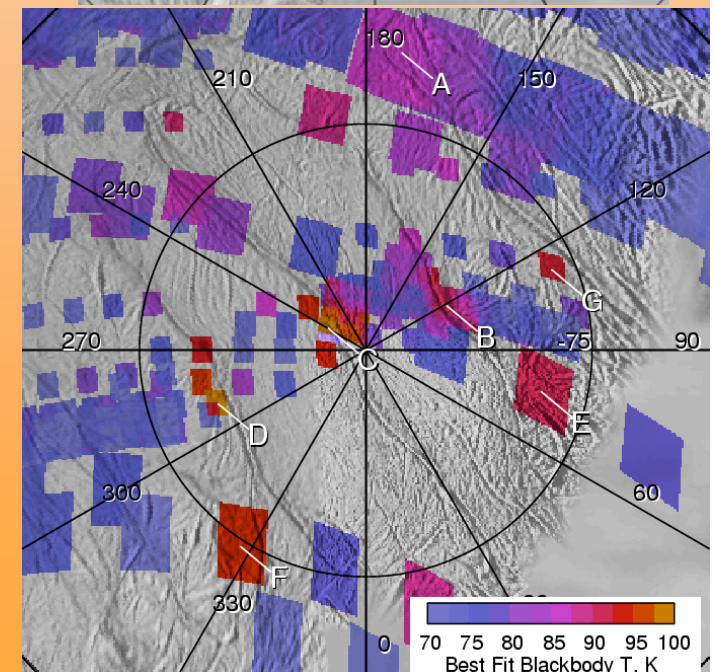
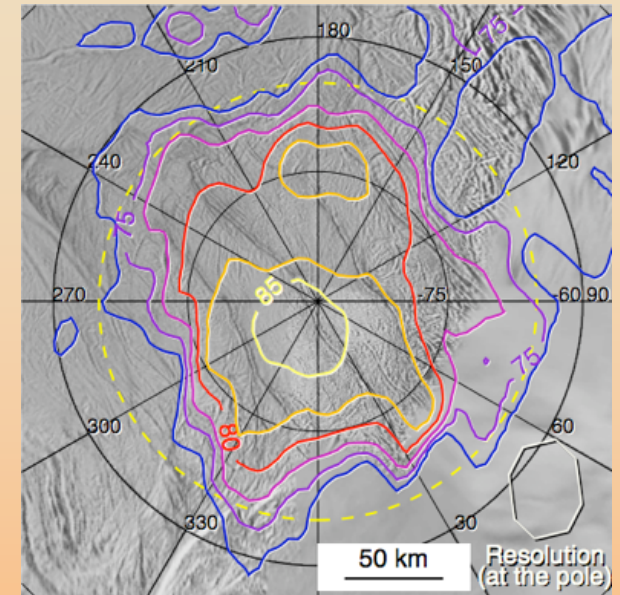
SOST, February 22nd 2007

Previous Enceladus South Polar Observations

- Rev. 11 Global FP3 map
 - Spatial resolution 23 x 32 km
- Similar map on Rev. 32
 - Spatial resolution 32 x 35 km



- Scattered ridealong FP3 observations
 - Spatial resolution ≥ 6 km
- No useful FP1 (long wavelength) south polar observations



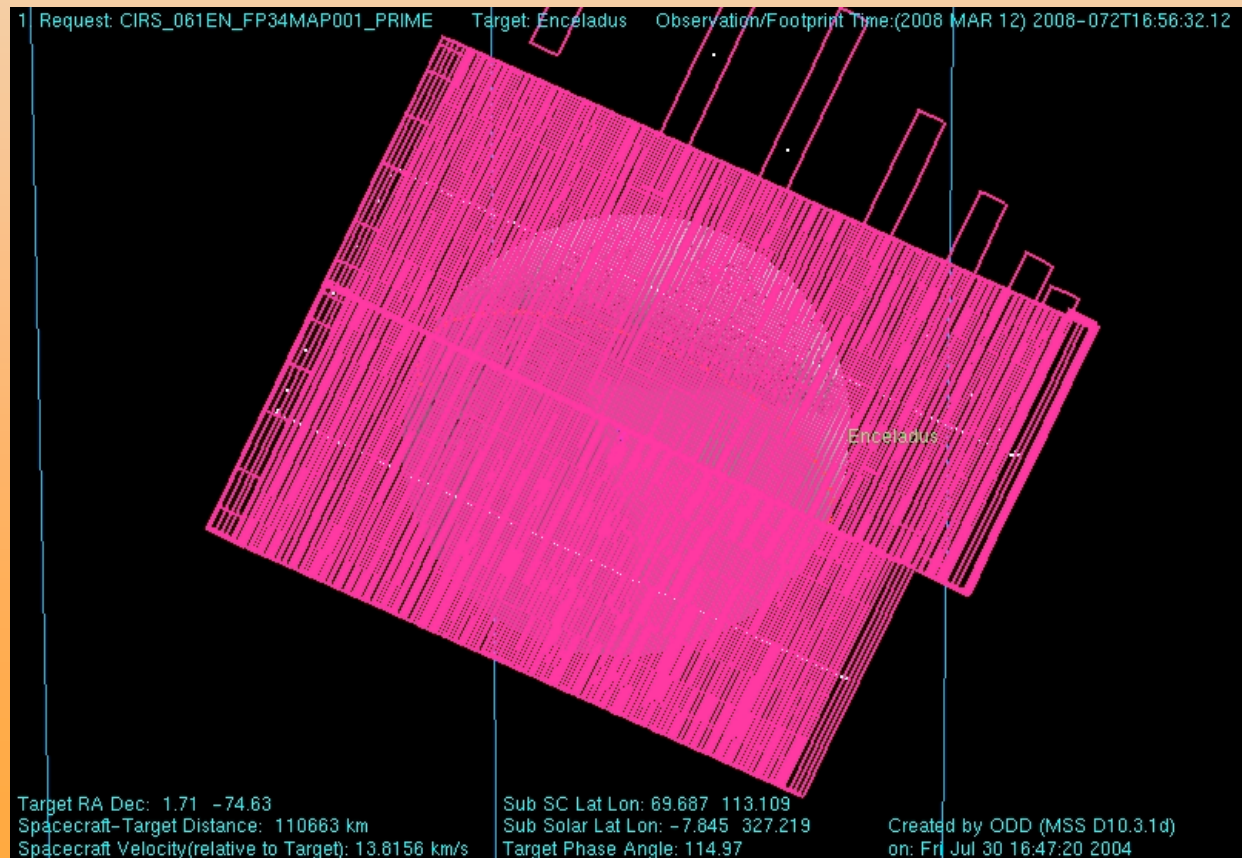
Goals for Rev. 61

In rough order of decreasing importance

- Contiguous FP3 (10 - 16 μm) maps of tiger stripes at 3x - 5x improved spatial resolution (4 - 10 km)
 - Map sources of endogenic heat, pathfind future observations
- 6-minute FP3 integration on a known hot spot (“C”)
 - Improved temperature constraints, constrain plume source mechanisms
- FP1 (16 - 500 μm) spectroscopy of south polar region and surroundings in eclipse
 - Constrain total heat flow for geophysical models
- FP1 eclipse egress observation
 - Thermophysical properties (helps to constrain heat flow)
- FP1 northern hemisphere approach map
 - Thermophysical properties (helps to constrain heat flow)
- FP3 search for northern hemisphere hot spots on approach
 - Understand global distribution of geological activity

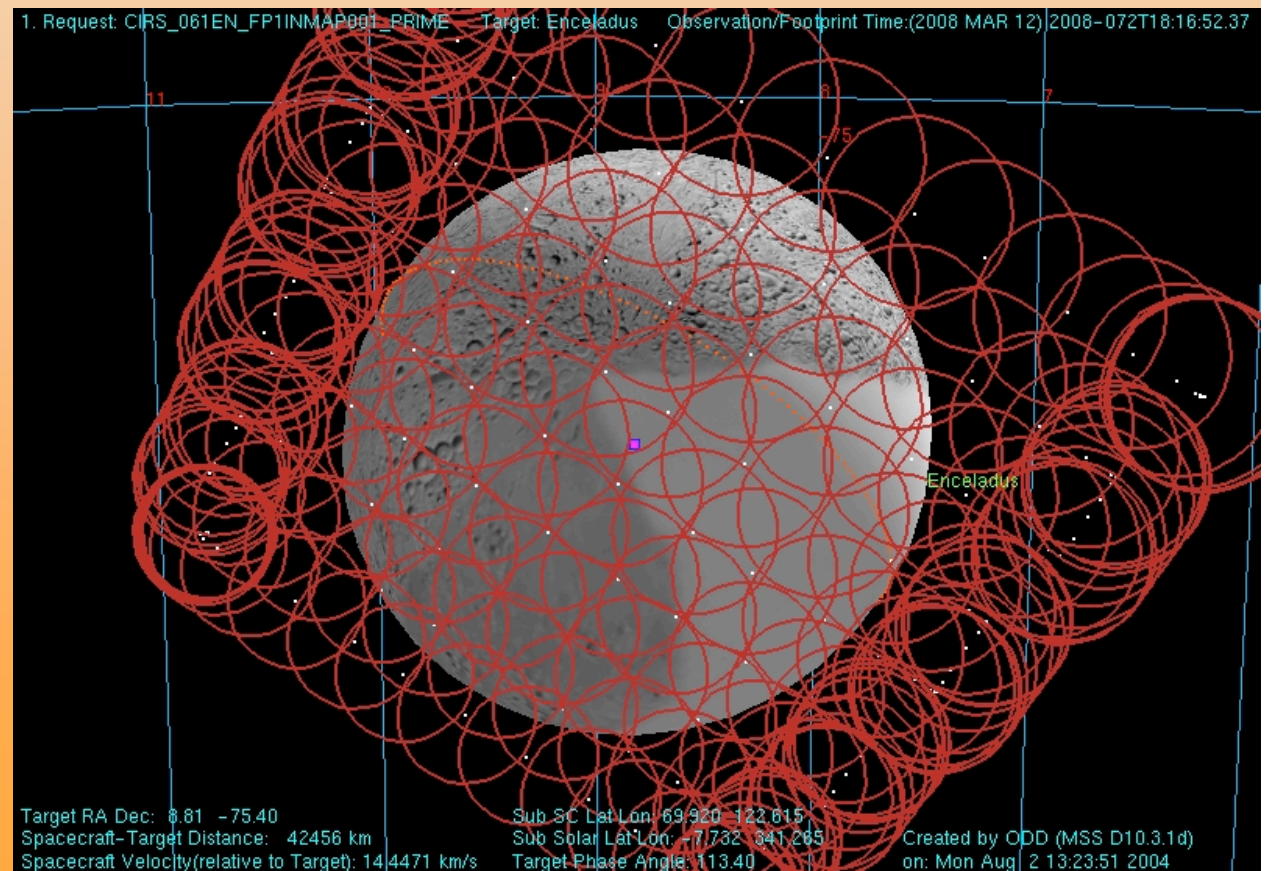
CIRS_061EN_FP34MAP001

- C/A-02:30 → C/A-01:53 (16:36 - 17:13)
- Scan northern hemisphere with FP3, FP4 for
 - Endogenic hot spots
 - Passive thermal emission



CIRS_061EN_FP1INMAP001

- C/A-00:59 → C/A-00:41 (18:07 - 18:25)
- Map northern hemisphere with FP1 for thermophysical properties (bolometric albedo, thermal inertia)

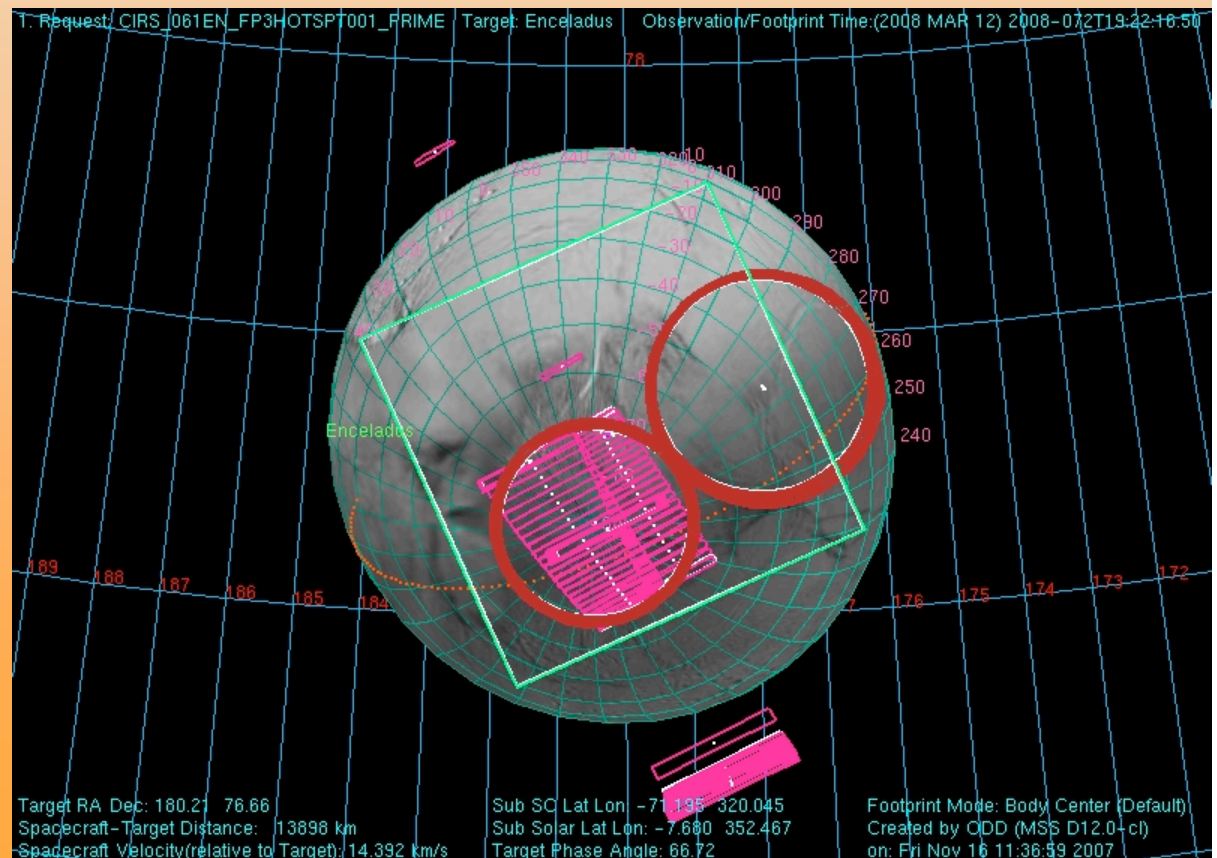
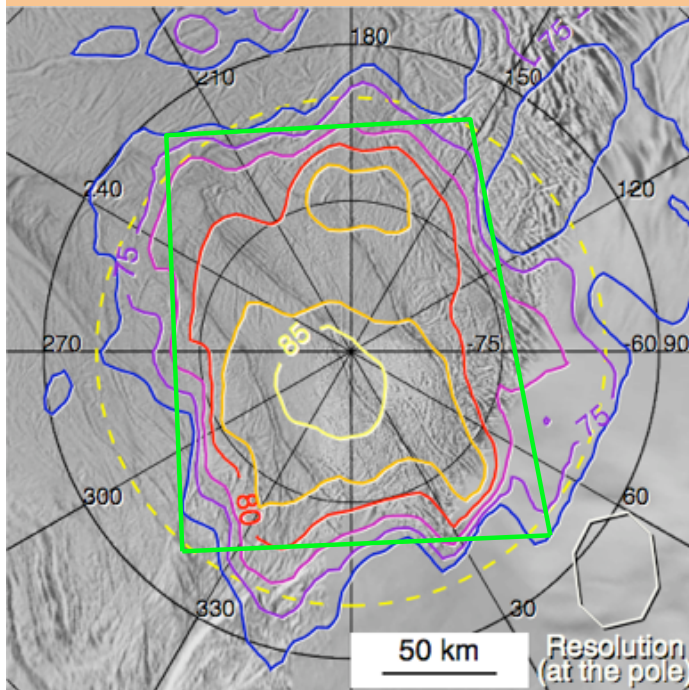


CIRS_061EN_FP3HOTSPOT001, start

Saturn eclipse helps eliminate radiation from passively-heated regions

- 19:11:12, +00:05:00 Begin turn from MAPS C/A attitude
- 19:21:37, +00:15:25 Complete turn, with FP3 at 330 W, 70 S
- 19:22:12, +00:16:00 Begin FP3 tiger stripe map (range 13,831 km, FP3 resn. 4.1 km)
- 19:43:25, +00:37:13 End FP3 tiger stripe map (range 32,110, FP3 resn. 9.6 km)

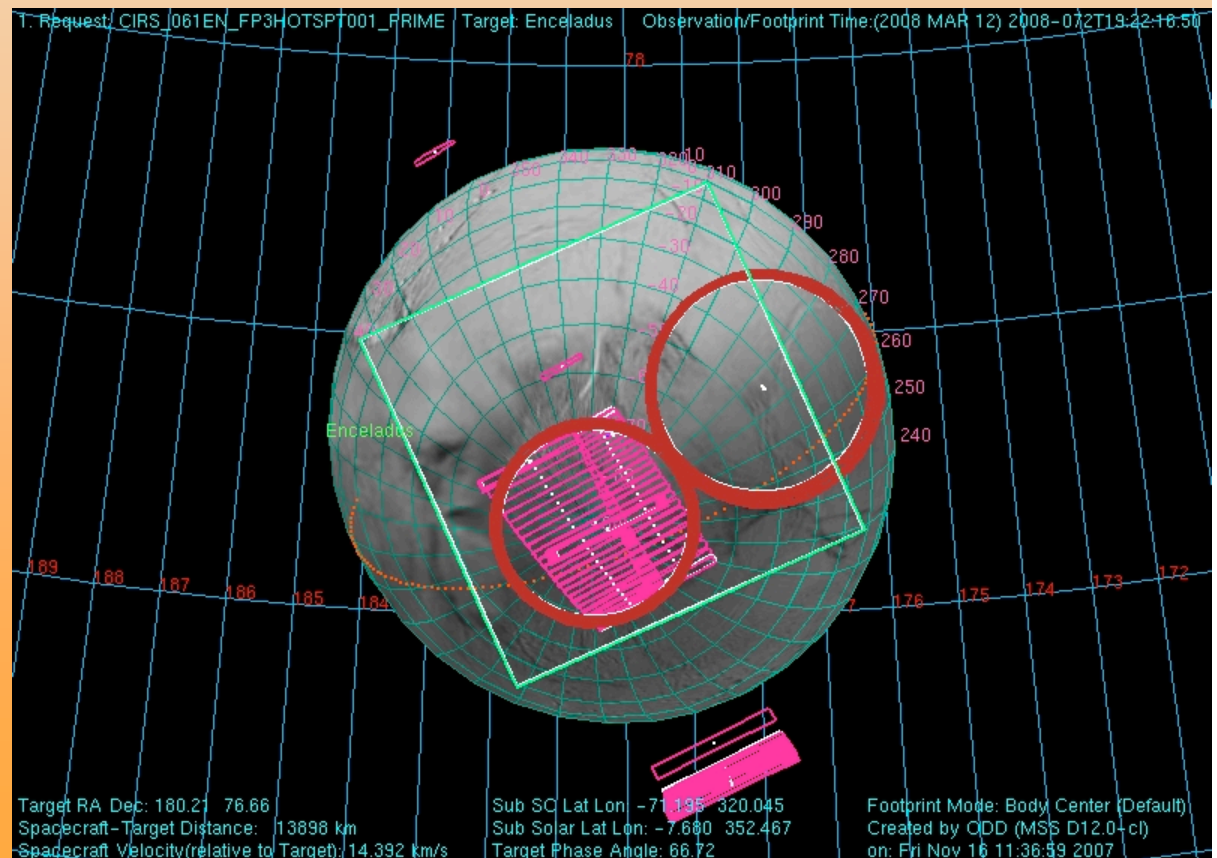
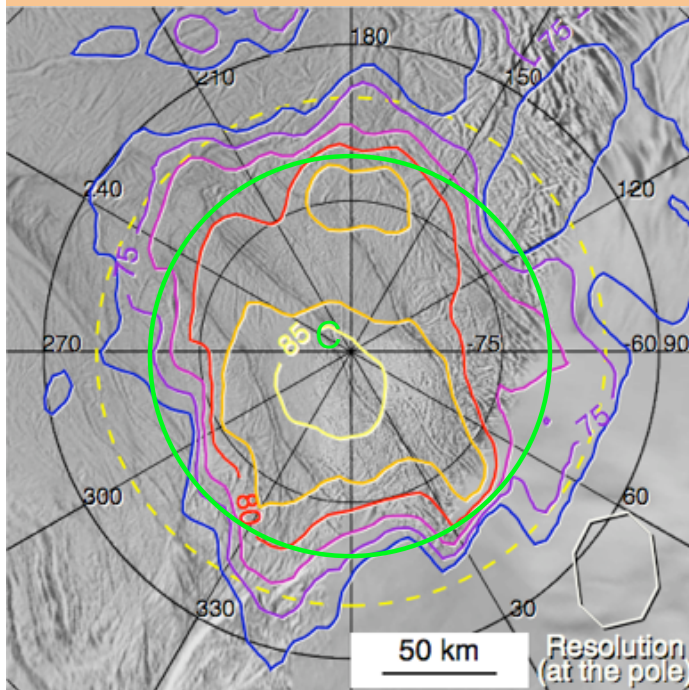
FP3 coverage, compared to Rev. 11 map



CIRS_061EN_FP3HOTSPOT001, Contd.

- 19:44:10, +00:37:58 Begin FP3 stare at plume source “VI”, hot spot “C” (87 S, 236 W).
(range 32,754 km, FP3 resn. 9.8 km)
- 19:50:26, +00:44:14 Offset FP1, FP3, to sky for calibration
- 19:55:36, +00:49:24 Begin FP1 stare at south pole, for long-wavelength heat flow
- 20:02:32, +00:56:20 Begin FP1 stare at 44 S, 285 W, for passive subtraction
- 20:09:08, +01:02:56 End observation

Spot “C” location, FP1 south polar FOV



CIRS_061EN_FPSECLX001

C/A+01:48 → C/A-02:55 (20:54 - 22:01)

FP1 stare at eclipse reappearance (at 21:18) for thermophysical properties

FP3 scan of the south polar region

